



AMMONIA NITROGEN TEST KIT

OCTA-SLIDE METHOD

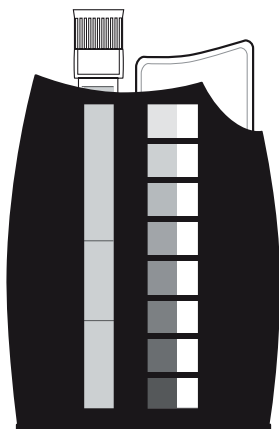
CODE 3351-02

QUANTITY	CONTENTS	CODE
30 mL	Ammonia Nitrogen Reagent #1	4797WT-G
30 mL	*Ammonia Nitrogen Reagent #2	*4798WT-G
2	Test Tubes, 2.5-5.0-10.0 mL, plastic, w/caps	0106
1	Ammonia Nitrogen Octa-Slide 2 Bar, 0.2-3.0 ppm	3438-01
1	Octa-Slide 2 Viewer	1101

*WARNING: Reagents marked with an * are considered to be potential health hazards. To view or print a Material Safety Data Sheet (MSDS) for these reagents go to www.lamotte.com. To obtain a printed copy, contact LaMotte by e-mail, phone or fax.

To order individual reagents or test kit components, use the specified code number.

USE OF THE OCTA-SLIDE 2 VIEWER



The Octa-Slide 2 Viewer should be held so non-direct light enters through the back of the Viewer. Slide the Octa-Slide 2 Bar into the Viewer. Insert the reacted sample into the top of the Viewer. Match the color of the reaction to the color standards.

WARNING! This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision

PROCEDURE

1. Insert the Ammonia Nitrogen Octa-Slide (3438-01) into the Octa-Slide Viewer (1101).
2. Fill test tube (0106) to the 5 mL line with sample water.
3. Add 4 drops of Ammonia Nitrogen Reagent #1 (4797WT). Cap and mix. Wait 1 minute.
NOTE: When testing salt (sea) water, increase the amount of Ammonia Nitrogen Reagent #1 to 8 drops.
4. Add 12 drops of *Ammonia Nitrogen Reagent #2 (4798WT). Cap and mix. Wait five minutes.
NOTE: When testing salt water, the reading should be taken after 1 minute to prevent precipitation.
5. Insert test tube into the top of the viewer. Match sample color to a color standard. Record as ppm Ammonia Nitrogen ($\text{NH}_3\text{-N}$).

CONVERSIONS

To express results as Ammonia (NH_3):

$$\begin{aligned} &\text{ppm Ammonia (NH}_3\text{)} = \\ &\text{ppm Ammonia Nitrogen (NH}_3\text{-N)} \times 1.2 \end{aligned}$$

To express results as Ammonium (NH_4^+):

$$\begin{aligned} &\text{ppm Ammonium (NH}_4^+\text{)} = \\ &\text{ppm Ammonia Nitrogen (NH}_3\text{-N)} \times 1.3 \end{aligned}$$

Ammonia in water occurs in two forms: toxic unionized ammonia (NH_3) and the relatively non-toxic ionized form, ammonium ion (NH_4^+). This test method measures both forms as ammonia nitrogen ($\text{NH}_3\text{-N}$) to give the total ammonia-nitrogen concentration in water. The actual proportion of each compound depends on temperature, salinity, and pH. A greater concentration of unionized ammonia is present when the pH value and salinity increase.

1. Consult the table to find the percentage that corresponds to the temperature, pH, and salinity of the sample.
2. To express the test result as ppm Unionized Ammonia Nitrogen ($\text{NH}_3\text{-N}$), multiply the total ammonia nitrogen test result by the percentage from the table.
3. To express the test result as ppm Ionized Ammonia Nitrogen ($\text{NH}_4^+\text{-N}$), subtract the unionized ammonia-nitrogen determined in step 2 from the total ammonia nitrogen.

pH	10°C		15°C		20°C		25°C	
	FW ¹	SW ²	FW	SW	FW	SW	FW	SW
7.0	0.19	—	0.27	—	0.40	—	0.55	—
7.1	0.23	—	0.34	—	0.50	—	0.70	—
7.2	0.29	—	0.43	—	0.63	—	0.88	—
7.3	0.37	—	0.54	—	0.79	—	1.10	—
7.4	0.47	—	0.68	—	0.99	—	1.38	—
7.5	0.59	0.459	0.85	0.665	1.24	0.963	1.73	1.39
7.6	0.74	0.577	1.07	0.836	1.56	1.21	2.17	1.75
7.7	0.92	0.726	1.35	1.05	1.96	1.52	2.72	2.19
7.8	1.16	0.912	1.69	1.32	2.45	1.90	3.39	2.74
7.9	1.46	1.15	2.12	1.66	3.06	2.39	4.24	3.43
8.0	1.83	1.44	2.65	2.07	3.83	2.98	5.28	4.28
8.1	2.29	1.80	3.32	2.60	4.77	3.73	6.55	5.32
8.2	2.86	2.26	4.14	3.25	5.94	4.65	8.11	6.61
8.3	3.58	2.83	5.16	4.06	7.36	5.78	10.00	8.18
8.4	4.46	3.54	6.41	5.05	9.09	7.17	12.27	10.10
8.5	5.55	4.41	7.98	6.28	11.18	8.87	14.97	12.40

¹Freshwater data from Trussel (1972).

²Seawater values from Bower & Bidwell (1978). Salinity for Seawater values = 34% at an ionic strength of 0.701 m.

FOR EXAMPLE:

A fresh water sample at 20°C has a pH of 8.5 and the test result is 1.0 ppm as total Ammonia-Nitrogen.

1. The percentage from the table is 11.18% (or 0.1118).
2. 1 ppm total Ammonia Nitrogen x 0.1118 = 0.1118 ppm Unionized Ammonia-Nitrogen
3.

Total Ammonia-Nitrogen	1.0000 ppm
Unionized Ammonia-Nitrogen	- 0.1118 ppm
Ionized Ammonia-Nitrogen	= 0.8882 ppm

